

## **Focus on Energy Policy Regarding LED Lighting for General Illumination in Non-residential Applications**

Focus on Energy is a strong proponent of energy efficient products, and continues to monitor the progress of light-emitting diode (LED) technology. While we believe LED lighting has the potential to save customers a significant amount of energy, we will provide incentives for only the most efficient and reliable products on the market. ENERGY STAR has published performance specification standards for several categories of Solid State Luminaire (SSL) products, and has published draft specifications for additional categories.

Because testing of products by the U.S. Department of Energy's CALiPER (Commercially Available LED Product Evaluation and Reporting) program indicates that some manufacturers are providing product spec sheets with inaccurate or misleading information, actual NVLAP accredited laboratory test reports are required to determine if proposed SSL products meet ENERGY STAR criteria or to compare their performance to the technology they are intended to replace.

### **Prescriptive Incentives**

Prescriptive incentives are currently available for ENERGY STAR® qualified and listed LED downlight products. For specific model information please see the ENERGY STAR® qualified product list: [http://www.energystar.gov/index.cfm?fuseaction=ssl.display\\_products\\_com\\_pdf](http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pdf).

### **Custom Incentives**

As of July 1 2010, Focus on Energy has suspended custom incentives on LED products. The program will continue to offer guidance to customers by providing educational materials from the Department of Energy SSL initiative, ENERGY STAR®, Lighting Facts, and other objective resources.

### **Integral LED Replacement Lamps**

On December 3, 2009 the U.S. Department of Energy announced the publication of the final ENERGY STAR® criteria for Integrated LED Replacement Lamps. These criteria will go into effect on August 31, 2010. Manufacturers are encouraged to become partners and submit their products' test reports for review and approval in advance of the effective date. Manufacturers are prohibited from labeling their products as ENERGY STAR® qualified prior to August 31, 2010.

<http://www.drintl.com/htmlmail/Energystar/Dec09/IntegralLampsFINAL.pdf>

Focus on Energy will support the efforts of ENERGY STAR® by directing customers to the ENERGY STAR® qualified product list for replacement lamp technologies, but *does not currently have incentives for integrated LED replacement lamps*. Please note that this criteria only covers screw-base, incandescent replacement lamp types and does not include products intended to replace linear fluorescent.

Focus on Energy is committed to ensuring that consumer expectations for product performance are met and that only reliable, quality products are promoted in the marketplace.

For more information on LED technology, standards, reports and ongoing testing, please refer to the U.S. Department of Energy Web site at <http://www1.eere.energy.gov/buildings/ssl/index.html>. For more information on LED lighting and how it can help you save energy and money, visit the U.S. Department of Energy's solid-state lighting page at <http://www1.eere.energy.gov/buildings/ssl/publications.html>.

## **Recommendations for customers interested in pursuing LED projects**

Focus on Energy recommends that end use customers considering implementing LED lighting projects obtain the following documentation from LED product manufacturers to help make informed purchasing decisions.

1. Product Data sheet with complete information on exact options being specified
2. LM-79 Tests: Independent Test report according to IES LM-79 that provides efficacy, output, color, and photometric distribution of your product. An Integrating Sphere Test will be required to provide color information. A Goniophotometer test by itself is not adequate. At a minimum, the LM-79 testing report(s) should include:
  - a. Luminaire efficacy (Lm/w)
  - b. Light Output (Lumens)
  - c. Color Rendering Index (CRI)
  - d. Correlated Color Temperature (CCT)
3. LM-80 Test: LED Chip or Light Engine Package Manufacturer IES LM-80 Test Report with results showing relative (%) light output over time at 55°C, 85°C and X°C (a third temperature at the manufacturer's choice).
4. In-Situ Temperature Test report indicating the Temperature of the hottest LED In-Situ in ANSI/UL 1598-04 (hardwired) or ANSI/UL 153-05 (corded) environments. This temperature measurement will be used with LM-80 data to validate lumen maintenance and useful life of product. Note that this temperature measurement should be specially requested by the manufacturer as they are getting their UL testing.
5. Lifetime. Provide detailed written explanation of how L70 Lifetime of Product is determined.
6. IES File. Provide absolute photometric testing data in IES LM-63 electronic file format.
7. Proof of UL Listing
8. Product Warranty
9. Additional documentation including photometric layouts, site plans.